



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,514	01/29/2004	Oscar E. Agazzi	13479US04	5537
23446 7590 10/24/2007 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661			EXAMINER HA, DAC V	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 10/24/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/767,514

Applicant(s)

AGAZZI, OSCAR E.

Examiner

Dac V. Ha

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. This office action is in response to the REMARKS filed on 08/20/07.

#### ***Terminal Disclaimer***

2. The terminal disclaimer filed on 08/20/07 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US Patent No. 6,792,038 and 6,212,225 has been reviewed and is accepted. The terminal disclaimer has been recorded.

#### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1-18** are rejected under 35 U.S.C. 103(a) as being unpatentable over Gonikberg et al. (US 5,864,545) (hereafter Gonikberg).

**Regarding claim 1**, the general structure and operation of transceivers or modems in a communication system or network is well known in the art despite design variation. Gonikberg et al. disclose a System And Method For Improving Convergence During Modem Training And Reducing Computational Load During Steady-State Modem Operations which implicitly teaches the claimed subject matter "for each transceiver, separating ... reduction system" by means of adaptively decoupling the

echo canceller and the equalizer so as to “separate” the echo canceller and the equalizer during a particular training phase, thus, provide effective training for the echo canceller and the equalizer (Figure 4, elements 40; Figures 5A, 5B; Column 6, line 49 to Column 7, line 11.)

**Regarding claim 2**, Gonikberg et al. further teach the claimed subject matter “converging ... system of the master” as follows. In the transmit-only phase, the echo canceller of the “master” transceiver is converging while the equalizer is converging the receiving (“slave”) transceiver. In the receive-only phase, the equalizer is converging in the master transceiver while the echo canceller is converging in the slave transceiver. After that, the system enter a full-duplex transmission (including training and data communicating) wherein the echo canceller could have been retrained (Column 5, line 9 to Column 7, line 50.) Further, even though Gonikberg et al. only indicate that the modem receiver should be synchronized with the remote modem utilizing the clock recovery circuit (Figure 6, element 682; Column 9, lines 66-67; Column 10, lines 8-11) one skilled in the art would have understood that time converging utilizing training would have occurred at the receiving (i.e. during which the equalizer is converging.)

**Regarding claim 3**, the claimed subject matter “wherein ... system of the master” would have been realized by one skilled in the art since it is known in the art at starting up of a system, preset parameters or the latest value could have been utilized.

**Regarding claim 4**, the claimed subject matter “wherein ... system of the slave” would have been realized by one skilled in the art since it is known in the art that after the system is in sync, it should have been maintained.

**Regarding claim 5**, Gonikberg et al. further teach the claimed subject matter “wherein ... canceller” in Figure 3, element 310.

**Regarding claim 6**, Gonikberg et al. further teach the claimed subject matter “wherein ... cancellation system” in Column 7, line 67 to Column 8, line 2.

**Regarding claim 7**, Gonikberg et al. disclose a System And Method For Improving Convergence During Modem Training And Reducing Computational Load During Steady-State Modem Operations which implicitly teaches the claimed subject matter “executing a first stage ... executing a second stage ... slave is trained” in Column 3, lines 4-15. Gonikberg et al. further suggest the teaching of the claimed subject matter “executing a third ... is retrained” is conventional in the art in Column 5, lines 27-31.

**Regarding claim 8**, Gonikberg et al. further suggest the teaching of the claimed subject matter “transitioning ... third stage” in Column 3, lines 30-50; Column 6, line 44 to Column 7, line 50.

**Regarding claim 9**, the claimed subject matter “wherein ... duration” would have been obvious to one skilled in the art since how to utilize the initialization period is well known in the art.

**Regarding claim 10**, the claimed subject matter “wherein ... equal” would have been obvious to one skilled in the art since how to utilize the initialization period is well known in the art.

**Regarding claim 11**, Gonikberg et al. further teach the claimed subject matter “transmitting ... master” in Column 5, lines 9-59; Column 6, line 61 to Column 7, line 50.

**Regarding claim 12**, Gonikberg et al. further teach the claimed subject matter “wherein ... the slave” in Column 6, lines 39-60; Column 7, lines 7-19.

**Regarding claim 13**, Gonikberg et al. further teach the claimed subject matter “transmitting ... slave” in Column 5, lines 9-59; Column 6, line 61 to Column 7, line 50.

**Regarding claim 14**, Gonikberg et al. further teach the claimed subject matter “wherein ... the master” in Column 6, line 39 to Column 7, line 6.

**Regarding claims 15-18**, see the combination of claims 1-14 above.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention to utilize the teaching of “separately” converging the echo canceller and the equalizer the a modem system taught by Gonikberg et al. with appropriate modification to at least improve the convergence rate of the system.

#### ***Response to Arguments***

5. Applicant's arguments filed on 08/20/07 have been fully considered but they are not persuasive.

In the REMARKS filed 08/20/07, page 2, second paragraph, applicant has argued “Claims 1-18 were ... but there is no mention of separating the convergence of a timing recovery system from the convergence of a noise reduction system, per claim 1 ... claims 2-6 depending therefrom.” However, Gonikberg teach that the “noise reduction system” is not coupled during the receive-only phase (col. 7, lines 9-12). During this receive-only phase, there is a “timing recovery system” connected as shown in Fig. 6, element 682. Thus, this effectively teaches the separation between the timing recovery system and the noise reduction system, as claimed.

Still in the REMARKS, page 2, third paragraph and continuing on to page 3, applicant has argued "Claim 7 is directed to ... after executing first and second stages ... depending therefrom." As indicated previously, when the "master" transceiver (a first modem) transmits, the "noise reduction system" is coupled in the master transceiver, therefore the noise reduction system is trained. However, at the same time, in the slave transceiver (a second modem), which is in receive-only phase, only the equalizer and the timing recovery systems are trained (as indicated above). Similarly, the second stage occurs when the master is in receive-only phase and the slave is in the transmit-only phase. The opposite to what occurs in the first stage would happen in the second stage. Further, Gonikberg also discloses "the third stage" in which "the noise reduction system of the master is retrained after executing first and second stages" in col. 5, lines 27-31.

Same with the above is applied to claims 15-18.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dac V. Ha whose telephone number is 571-272-3040. The examiner can normally be reached on 4/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'D. Ha', with a horizontal line underneath.

Dac V. Ha  
Primary Examiner  
Art Unit 2611